

Appl. No.: 10/772022  
Amdt. dated: 11/04/2005  
Reply to Office action of: 08/11/2005

### REMARKS / ARGUMENTS

According to the Office action of August 11, 2005, the information disclosure statement of February 3, 2004 was not considered because copies of the non-patent literature were not provided. The undersigned's file copy of the application, as filed, includes copies of the non-patent literature referred to in the Information Disclosure Statement and the transmittal letter and the return receipt postcard, acknowledged by the Office, (copy enclosed) indicate that copies of the references were forwarded with the application. Enclosed herewith is an additional copy of the non-patent literature (92 pages) cited in the Information Disclosure Statement. The applicant respectfully requests that the references cited in the Information Disclosure Statement be considered and that the Examiner acknowledge consideration of the references. The applicant respectfully asserts that the non-patent literature was forwarded with the application and no fee is due.

The specification stands objected to because of informalities and the applicant requests amendment of the specification as indicated above to correct the cited informalities. Specifically, the applicant requests amendment of:

Paragraph [0018], lines 6, 7 and 10 to change the reference number for the "generator" from 20 to 28 (3 places).

Paragraph [0023], lines 1 and 7 to change the reference number for the "longitudinal axis" from 94 to 90 (2 places) and the reference number for the chord axis from 92 to 96 (1 place).

In addition the applicant requests amendment of paragraph [0022], line 5 to change the reference number for the "chord axis" from 92 to 96 (1 place). The applicant respectfully requests withdrawal of the objection to the specification.

Claims 1-3, 5, 6, 8, 10, 12, 14 and 16 stand rejected under 35 U.S.C. 102(b) as anticipated by Goldberg (US 5,405,246) (Goldberg). Goldberg discloses a vertical axis wind turbine with a blade that is "twisted" in the sense that "the chord of each blade is substantially tangent to (or has a substantially constant angle relative to) a surface of rotation along a generating line traced on the surface of rotation; the top and bottom portions of the generating line intersect the axis of rotation but lie in different radial planes" (col. 7, line(s) 22-29) and where

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the axis of rotation 12 is the polar axis of the surface of rotation defining the blade's profile, in elevation, (col. 7, line(s) 14-16) and the axis of rotation of the blade supports (hubs 16 and 18) (col. 3, line(s) 39-40). The applicant respectfully submits that Goldberg does not anticipate claims 1 and 5 because the generating line, the "longitudinal axis," of the blade of Goldberg intersects the polar axis 12 of the generating surface at both ends of the blade and, therefore, is not skewed relative to the polar axis. However, to further clarify the relationship of the longitudinal axis of the claimed vane to the polar axis of the spheroid, the applicant requests amendment of claims 1 and 5 to recite, as illustrated in FIG. 7, that the skew of the longitudinal axis of the vane is such that a projection of the longitudinal axis of the vane beyond the end of the vane does not intersect the polar axis of the spheroid to which the leading edge is conformed. The applicant respectfully submits that Goldberg also does not anticipate claims 1 and 5 for this additional reason and requests withdrawal of the rejection and allowance of the claims.

With regard to claims 2, 8, 11, 12 and 14, the applicant submits that the claims are dependent from claim 1 or claim 5 or a claim dependent from claim 1 or claim 5, and inherit all of the limitations of the claim(s) from which each respectively depends. The applicant respectfully submits that since claims 1 and 5 are not anticipated by Goldberg, for the reasons stated above, claims 2, 8, 11, 12 and 14 are not anticipated by Goldberg. The applicant requests amendment of claim 2 to correct a typographical error. The applicant respectfully requests withdrawal of the rejection and allowance of claims 2, 8, 11, 12 and 14.

Claims 3 and 16 are dependent from claim 1 or claim 5 or a claim dependent from claim 1 or claim 5, and inherit all of the limitations of the claim(s) from which each respectively depends. The applicant respectfully submits that since claims 1 and 5 are not anticipated by Goldberg, for the reasons stated above, claims 3 and 16 are not anticipated by Goldberg. The office action asserts that the leading and trailing edges of the blade of Goldberg substantially conform to the surface of an ellipse, but the applicant respectfully submits that the major axis of the ellipse to which the leading and trailing edges conform is not arranged transverse to the longitudinal axis of the blade (parallel to the blade's chord axis) and the minor axis is not arranged normal to the major axis and the surface of the edge. The applicant requests amendment of claims 3 and 16 to indicate that major axis of the ellipse is parallel to a chord to

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further clarify its arrangement transverse to the longitudinal axis of the vane. The applicant respectfully requests withdrawal of the rejection and allowance of claims 3 and 16.

Claim 6 is dependent from claim 5 and inherits all of the limitations of claim 5. The applicant respectfully submits that since claim 5 is not anticipated by Goldberg, for the reasons stated above, claim 6 is not anticipated by Goldberg. Further, the applicant respectfully submits that the axis of rotation of the blade supports (hubs 16 and 18) of Goldberg is the axis of rotation 12 of the turbine (col. 3, line(s) 39-40) and, since the longitudinal axis of the blade intersects the rotational axis of the blade supports at the ends of the blade, the longitudinal axis of the blade of Goldberg is not skewed relative to the rotational axis 12 of the blade support. However, to further clarify the relationship of the longitudinal axis of the vane and the rotational axis of the blade support of claim 6, the applicant requests amendment of claim 6 to recite that the skew of the longitudinal axis of the vane is such that it does not intersect the rotational axis of the blade support as disclosed by Goldberg (col. 7, line(s) 26-27). The applicant respectfully submits that Goldberg does not anticipate claim 6 and requests withdrawal of the rejection and allowance of the claim.

Claims 23 and 24 stand rejected under 35 U.S.C. 102(b) as anticipated by Luchuk (US 3,970,409) (Luchuk). Luchuk discloses a flywheel containing a quantity of mercury that can move between the hub and the outer rim of the flywheel to vary the angular inertia of the flywheel (col. 2, line(s) 16-25), but the applicant respectfully submits that the mass of the flywheel of Luchuk is not variable. However, to further clarify the structure of the flywheel the applicant requests amendment of claim 23 to recite that the mass of the flywheel of claim 23 is variable by altering the quantity of matter making up the flywheel. The applicant submits that Luchuk does not disclose a flywheel having a mass variable by altering a quantity of matter making up the flywheel. The applicant respectfully requests withdrawal of the rejection and allowance claim 23.

Claim 24 is dependent from claim 23 and inherits all of the limitations of claim 23. The applicant respectfully submits that since claim 23 is not anticipated by Luchuk for the reasons stated above, claim 24 is not anticipated by Luchuk. In addition, the applicant requests amendment of claim 24 to make the language consistent with the language of claim 23 and to clarify that the fluid control controls fluid flowing between a source external to the flywheel and the torus. The applicant respectfully submits Luchuk does not disclose a control for fluid flowing

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between the torus and a source external to the flywheel and does not anticipate claim 24 for this additional reason. The applicant respectfully requests withdrawal of the rejection of claim 24 and allowance of the claim.

Claims 7, 13, 25 and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Goldberg in view of Luchuk. According to the office action, Goldberg discloses all of the claimed subject matter of claims 7, 13, 25 and 26 except for the "variable flywheel" which is disclosed by Luchuk and the angle of skew of the longitudinal axis of the vane. Claims 7 and 13 are dependent from claims 6 and 12, respectively, and, for the reasons specified above, the applicant submits that claims 6 and 12 are not disclosed or suggested by Goldberg or Luchuk and, for at least these reasons, are not obvious from Goldberg and Luchuk

In addition, claims 7 and 13 recite a wind turbine having a blade with a longitudinal axis skewed at an angle relative to the rotational axis of the turbine which, according to the specification, increases the chord line of the airfoil and the ram pressure exerted on the vane, page 6, [0024]. The office action opines that this limitation is obvious since the only purpose of skewing the vane is improving the performance and "it appears that the vane of Goldberg would perform equally well with an angle as claimed by the applicant." The applicant respectfully submits that neither Goldberg nor Luchuk explicitly nor implicitly discloses nor suggests skewing the blade relative to the axis of rotation of the turbine and neither of the references nor the office action provides any basis for concluding that the blade of Goldberg perform better or will function at all if skewed relative to the axis of rotation. General knowledge of facts outside the record may only be relied on if the facts are capable of instant and unquestioned demonstration as "well known" in the art. The applicant respectfully submits that the effect of skewing the vane is not such a fact and requests production of a reference establishing knowledge of the effect of skewing the vane of a wind turbine as claimed. The applicant submits that claims 7 and 13 are not obvious under 35 U.S.C. 103, because the references do not teach or suggest all of the claim limitations and neither the references nor any general knowledge offered in the office action include a suggestion or motivation to modify the reference teachings by skewing the vane of a wind turbine relative to the axis of rotation. The applicant respectfully requests withdrawal of the rejection and the allowance of claims 7 and 13.

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Claim 25 is dependent from claim 23 and inherits all of the limitations of claim 23. The applicant respectfully submits that Goldberg does not disclose a wind energy converter that includes a flywheel and Luchuk does not disclose a variable mass flywheel for the reasons stated above. In addition, the applicant submits that neither Goldberg nor Luchuk discloses a vane for a wind energy converter that includes a leading edge approximating a sine wave and a longitudinal axis skewed relative to the polar axis of a spheroid that defines the edge. The applicant respectfully submits that claim 25 is not obvious from Luchuk and Goldberg and requests withdrawal of the rejection and allowance of the claim.

Claim 26 is dependent from claim 25 and inherits all of the limitations of claim 25. The applicant respectfully submits that since claim 25 is not obvious from the combination of Goldberg and Luchuk for the reasons stated above, claim 26 is not obvious. In addition, the applicant submits that neither Goldberg nor Luchuk discloses a wind turbine vane having a surface approximating an ellipse having a major axis arranged parallel to a chord axis of the vane and a minor axis arranged normal to the major axis and the surface.

Claims 4, 9, 15 and 17-22 stand objected to as allowable but dependent on rejected base claims. The applicant acknowledges the allowability of claims 4, 9, 15 and 17-22 and submits that the claims from which they depend are allowable for the reasons stated above. The applicant requests withdrawal of the objection and allowance of claims 4, 9, 15 and 17-22.

The applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner believes that for any reason direct contact with applicant's attorney would

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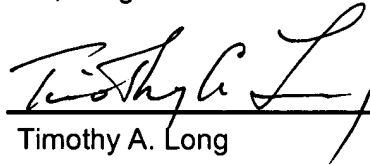
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advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the number below.

Respectfully submitted,  
Chernoff, Vilhauer, McClung & Stenzel, L.L.P.  
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By:

A handwritten signature in black ink, appearing to read "Timothy A. Long", is written over a horizontal line.

Timothy A. Long

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